

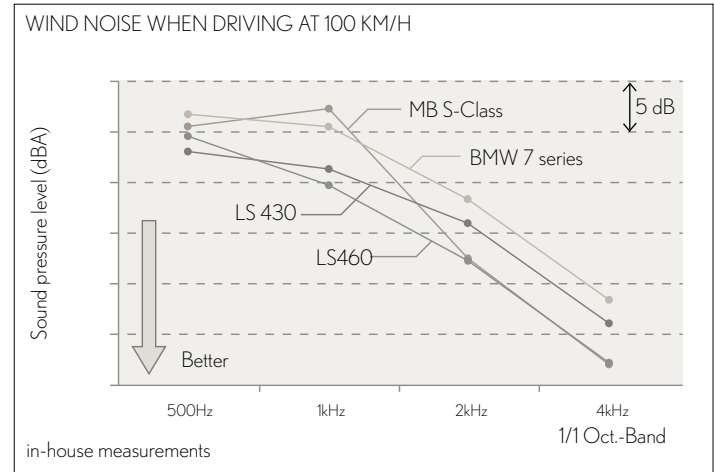
A world automotive first in the construction of the Lexus LS 400, the application of high precision laser welding has doubled in comparison with LS 430. This contributes both to greater manufacturing accuracy and increased rigidity, necessary to enhance steering response and feedback, improve body control when cornering and minimise the transmission of vibration from poor road surfaces. A combination of both spot and laser welding to the door opening crank area and room partition area maximises the torsional strength of the LS 460 bodyshell.

Aluminium components include the bonnet assembly, front and rear crush-box structures and bumper reinforcement, as well as the rear axle carrier and the front suspension sub-frame. Previously fabricated from some 30 separate components, the sub-frame is now constructed as a single, hollow, die-cast unit precision machined at all mounting and location points to ensure it meets the exacting tolerances required.

AERODYNAMICS

From the original LS 400 which, 17 years ago, evidencing a drag coefficient of just 0.29, each successive generation of LS has established a reputation for class-leading aerodynamics. With a drag coefficient of just 0.26 in all configurations, the new Lexus LS 460 maintains this tradition, and is the most aerodynamically efficient car in its segment.

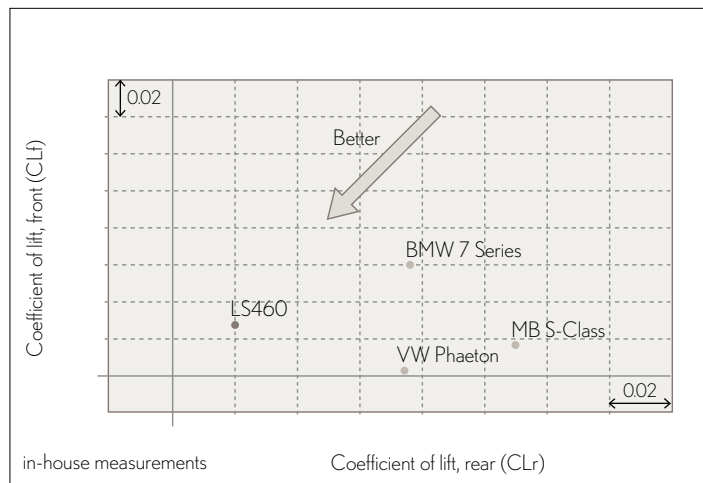
The Lexus flagship's sleek, flowing bodywork boasts exceptionally narrow panel gaps and minimal protrusions. Flush bonnet, headlight and windscreen surface surrounds minimise airflow separation, whilst door mounted mirrors reduce air turbulence adjacent to the "A" pillar.



Astern, the smooth convergence of the tapering waistline and sweeping “C” pillar, as well as the careful integration of twin exhausts within the clean profile of the rear bumper, ensure a clean passage of air to further reduce drag.

The addition of numerous aerodynamic under-body elements creates the smoothest, flattest possible surface to enhance high-speed vehicle stability and reduce wind noise to a minimum. These include a deep front spoiler, side skirts, front and rear tyre fairings, and covers to the cabin floor, transmission, fuel tank and rear suspension. Even the body attachment points have been designed with a flat seating to minimise wind turbulence.

The fully flat central undercover creates exceptional noise absorbing capabilities, particularly at higher frequencies, when compared with its direct competitors.



As a result, the new LS 460 boasts front and rear coefficient of lift figures of just 0.02 and 0.01 respectively, the former figure being 100%, and the latter 200%, lower than those of its predecessor. The new Lexus flagship’s rear coefficient of lift - fundamental to high speed cornering stability - is 0.06 lower than that of its closest competitor, according to in-house testing.

ALL-MULTILINK SUSPENSION

The new Lexus LS 460 adopts a multilink configuration to both front and rear air suspension systems. Allied to a vehicle tread width of 1,607 mm - the widest in the segment - and new, high performance, pneumatic springs, this all-new format affords the Lexus flagship exceptional stability and steering feel, whilst improving ride comfort and reducing noise and vibration transmitted from the unsprung mass.

Front Suspension

To the front, the LS 460 features a newly designed, upper and lower double joint suspension system. Both upper arms, the knuckle and the lower rear arm are forged in aluminium, effecting substantial weight savings to the unsprung mass. There are two key geometric features of the new system: firstly, an increase in the kingpin angle has improved jack-up torque within the forward mounted steering gear. Steering main shaft torque is greater than that of the LS 430, offering a considerably prompter response to steering input. Secondly, the centre kingpin offset has been reduced from 61.6 mm to 45.4 mm, a reduction of some 26% over that of the LS 430. This reduction not only elicits a flatter ride, but also decreases the transmission of vibrations from the tyre under braking.